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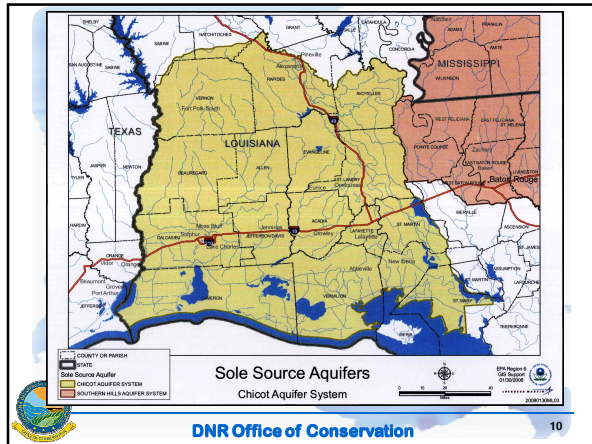
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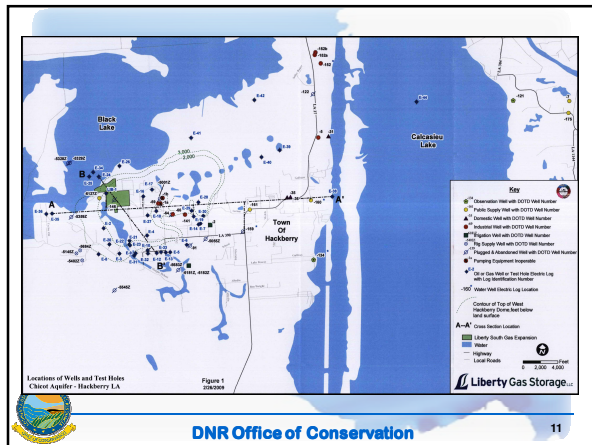
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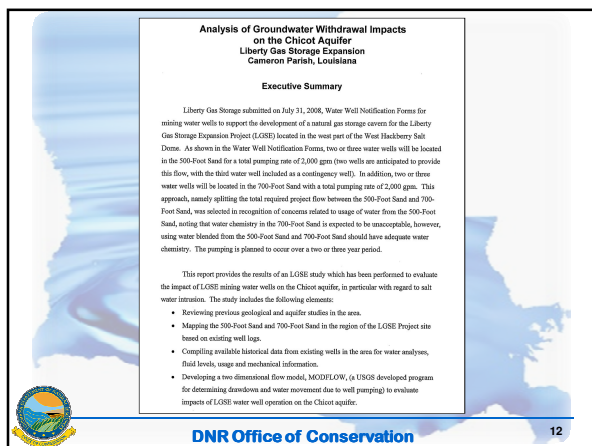
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## Evolution of the Water Well Driller Program

**OWNER**

Owner Company Name	Street Address	City	State	Zip	Phone Number	Fax Number	Email Address
Shel Western E & P Inc	111 Oak Hill Lane	Mandeville	LA	70452	5047711952	5047725554	brisa.galvan@shel.com

**DRILLER**

Driller License Number	Company Name	Contact Name	Address	City	State	Zip	Phone Number	Fax Number	Email Address
052	PRINCEGEY LTD	JOHN G. GUY	P.O. BOX 430	ARCADIA	LA	70001	5042671153	5042671156	WASH State Num

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## Evolution of the Water Well Driller Program

**Recent Major Milestones:**

- Draft Proposed Regulations
- Sept. 20, 2010 State Register Publication
- Database Merge
- Completed & Undergoing Data Update

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## Statewide Ground Water Management Plan

**Timeline**

- RFP Advertisement, Receipt & Evaluation
- Award Contract
- Contract execution (ongoing)
- Research, Evaluate, Study, Compile Statistics, Identify Best Management Practices, Prioritize, Workshops Outreach
- Issue Draft Comprehensive Report and Receive Public Comment
- Publish FINAL REPORT

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# Statewide Ground Water Management Plan

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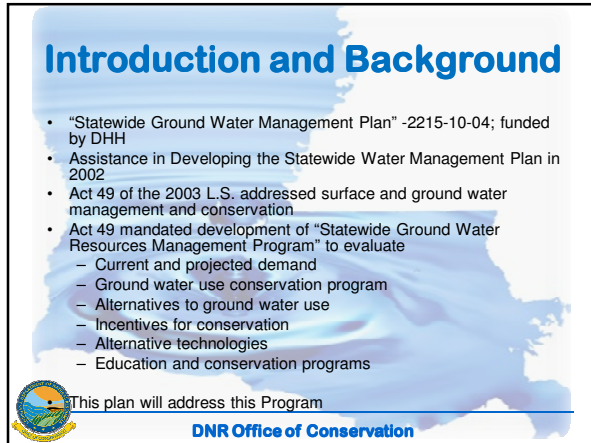
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## Introduction and Background

- "Statewide Ground Water Management Plan" -2215-10-04; funded by DHH
- Assistance in Developing the Statewide Water Management Plan in 2002
- Act 49 of the 2003 L.S. addressed surface and ground water management and conservation.
- Act 49 mandated development of "Statewide Ground Water Resources Management Program" to evaluate
  - Current and projected demand
  - Ground water use conservation program
  - Alternatives to ground water use
  - Incentives for conservation
  - Alternative technologies
  - Education and conservation programs

 This plan will address this Program

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## Objectives and Goals

Plan for **judicious and sustainable** use of ground water resources

- Update the baseline conditions of resources and needs
- Develop cost-effective water supply alternatives
- The plan will address
  - Reviewing and modifying the current system of ground water use reporting and monitoring
  - Developing more streamlined ground water well permitting process
  - Developing cost-effective alternatives to ground water
  - Developing a net work of aquifers to be used in a sustainable manner
  - Development or modification of GIS based database management
  - Consistency with State's Master Plan for coastal restoration and protection

**Primary goal is to develop a plan that emphasizes preserving the quality and sustainability of the State's ground water resources**

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## Technical Approach

- The project includes the implementation of nine (9) tasks:
  - Review of historic and current available information
  - Ground water use analysis
  - Review of ground water well prior notification and evaluation procedures
  - Feasibility and recommendations for short term (5 year) and long term (25 year) ground water use
  - Cost benefit analysis and prioritization of alternatives
  - Funding opportunities
  - Best management practices and tax incentives
  - Public hearing
  - Report preparation



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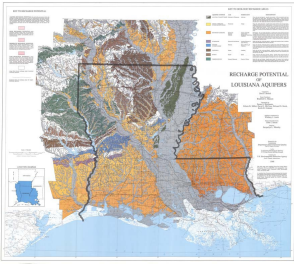

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## Task 1: Review of Existing Data

- Existing source and use data are reviewed
- USGS, institutions, and universities' resources are utilized
- Information is packaged into a synopsis by region and water sources
- Consideration of impacts of subsidence and relative sea level rise
- The "whole system analysis" approach will be used

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## Task 2: Ground Water Resources Use Analysis


Analysis will use:


- Pertinent data from Task 1, Existing Data Review
- Historic and current trends for population growth and movement
- Historic and projected ground water demands by population and various other sectors
- Data gaps will be identified and recommendations will be made for parishes and local entities to monitor such vital statistics

Red River Alluvial Aquifer



Sparta Aquifer System





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### Task 3: Review of Ground Water Well Prior Notification Procedure

- Current procedures will be reviewed upon receipt, review, and evaluation phases
- Recommendations will be made to streamline the process and to evolve better approach to understand or estimate the current demands on aquifer systems
- Opportunities for data base evaluation and on-line data entry for increasing efficiency and accuracy will be evaluated

Mississippi River Alluvial Aquifer

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### Task 4: Feasibility Study...

- Will use ground water availability models
- Maps (regional/aquifer scale) for
  - Areas of defined ground water decline, areas of salt water intrusion, potential alternate sources
- Sustainability and ground water quality objectives
  - Ground water use reduction strategies, waste water recycling, mitigation measures
- Recommendations will be based on
  - Areas of greatest stress
  - Ground water use trends in proposed service areas
  - Demographic projections
  - Inhibition of salt water intrusion
  - Unit cost for water treatment
  - Preservation of the aquifer systems
- Education and awareness



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### Task 4: ....Short (5 yr) and Long (25 yr) Term Alternatives

- Plan may recommend development or modification of existing availability models
- Cost-benefit analysis for proposed alternatives will be consistent with DED methods to identify viable alternatives
- Recommendations will include development of ground water level and water quality monitoring program



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### Task 4: ....Financial Feasibility Analysis

- Financial feasibility of alternatives to current ground water production
- Cost/benefit ratios
- Prioritization of short and long term alternatives
- Elements of Financial Feasibility Analysis
  - Calculate complete life cycle cost of each alternative (initial capital costs, O&M, and replacement costs)
  - The costs and revenues will be calculated by comparing the situation with and without the alternatives



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**Task 4: Financial Feasibility Analysis**

- Demand Analysis & Demand Forecasting
- Estimate Gap Between Future Demand and Supply from Existing Sources
- Identify Alternatives to Fill the Supply Gap
- Conduct Financial/Economic Feasibility Analysis
- Conduct Uncertainty Analysis (i.e., Sensitivity and Risk Analysis)
- Conduct Cost-Benefit Analysis of Alternatives
- Consider Other Factors (e.g., reliability, quality)
- Recommend and Prioritize Short and Long Term Alternatives

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### Task 4: ... Financial Feasibility Analysis..

- Each alternative will be compared against the information on potential local, state, and Federal funding sources (Task 6). Prioritization of alternatives will depend on the availability of funding
- To assess the financial feasibility of each alternative, the Financial Internal Rate of Return (FIRR) will be compared to the Weighted Average Cost of Capital (WACC)
- Financial analyses will be conducted in real terms (inflation adjusted) in line with standard practices



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### Task 4: ...Uncertainty Analysis

- Base case assumptions (anticipated likely values) and actual cost and revenue values will be evaluated
- Sensitivity and risk analysis will be conducted for each alternative as part of the uncertainty analysis



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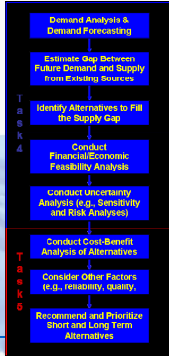
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### Task 5: Cost-Benefit Analysis and Prioritization

- Relationship between differing ground water output (alternatives) and their estimated costs will be determined
- Estimate of each alternative's cost with its estimated output (benefit), its Average Incremental Cost (AIC) can be calculated
- Supply curve will be created showing the amounts and costs of water supplied by alternative sources
- A list of short and long term alternatives will be developed based on financial feasibility, sensitivity, risk, cost-benefit ratio, other factors (including DED methods)



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### Task 6: Funding Opportunities

- Federal, State, and local funding sources will be explored
- Funding sources may be explored for:
  - Water treatment
  - Transmission
  - Distribution and storage for surface water supplies
  - Reclaimed water processing and reuse
  - Other



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### Task 6: Funding Opportunities...

- Funds that are targeted towards achieving water conservation include:
  - Build America Bonds (BABs)
  - WRDA 1992 funds (Environmental Infrastructure)
- Potential Funding Sources, examples:
  - USDA/Rural Utility Service Grants
  - DHH/EPA/LDEQ
  - Louisiana Capital Outlay Program
  - Louisiana CDBG
  - Clean Water State Revolving Funds
  - And many others



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### Task 6: Funding Opportunities...

- Innovative programs will be evaluated such as:
  - Water Independence Now (WIN) program
  - Applicable State Ground Water Policies
  - Texas ground water conservation district rules and permitting programs
  - Ground Water Replenishment Program, etc.



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### Task 7: BMPs and Tax Incentives

- Best Management Practices (nationwide, state, and regional) for tax incentives to reduce the cost for implementing management measures
  - Some incentives are designed to encourage private sector participation
  - Tax incentives relating to promoting conservation and water reuse
  - Popular nationwide programs will be explored
- Focus will be on incentives that balances fiscal considerations, efficiency, and environmental concerns
- Intense water use sectors will be targeted first



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### Task 8: Public Hearing

- Four (4) public hearings will be held
- Presentations will focus on technical and scientific approaches for water management
- Goals of these hearings:
  - Introduction of projects and processes
  - Build relationships and conflict resolution
  - Identify stakeholder issues and concerns, and opportunities



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### Task 9: Draft and Final Report

- Draft report of findings will be submitted to LDNR for input and comments
- Public comments will be received and incorporated
- An executive summary and final report will be prepared



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### Draft Plan Development Commission Member Workshops

Provided GWRC / GWMATF membership and interested parties additional opportunity for input and involvement in the development of the draft plan.

1. Written Questionnaire	16 Responses
2. Alexandria, LA	Sept. 22 <sup>nd</sup> & 29 <sup>th</sup>
3. SSA Consultants, LLC	Mtg. Facilitator



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### Contact Information

Department of Natural Resources  
Office of Conservation  
Environmental Division  
(225) 342-8244

<http://dnr.louisiana.gov/CONS/groundwater>



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